L 64748-65

ACCESSION NR: AP5016572

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A.F. Ioffe Akademii [illegible]

[illegible] Physicotechnical Institute, [illegible]

Card 3/3

L 5349-66 EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5021120 UR/0056/65/049/002/0549/0571

AUTHOR: Azimov, Ya. I.; Ansel'm, A. A.; Gribov, V. N.; Danilov, G. S.; Dyatlov, I. T.

TITLE: Three-particle partial amplitudes and the unitarity conditions for complex values of the angular momentum

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 2, 1965, 549-571

29

TOPIC TAGS: particle interaction, scattering amplitude, moving pole method, analyticity

B

19

ABSTRACT: This is a continuation of an earlier paper (ZhETF v. 48, 1776, 1965) dealing with the mechanism of the occurrence of Mandelstam branch points on the basis of many-particle unitarity conditions for complex angular momentum (j). The present article considers the possibility of continuing the partial amplitudes for the transformation of two particles into the domain of complex j, and investigates their properties for the simplest types of Feynman diagrams. A general method is described first for analytic continuation of the amplitudes in j when the helicity (m) assumes integer values. It is shown that the concrete character of the asymp-

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L 5349-66
ACCESSION NR: AP5021120

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totic behavior of the amplitudes depends on the values of the pair energies of the produced particles. The unitarity conditions for the amplitudes are then investigated with respect to the pair energies. The exact form of the three-particle contribution to the unitarity conditions is finally obtained for complex j and for several simple Feynman diagrams, and it is shown that the construction of the unitarity conditions is equivalent to the calculation of the Mandelstam spectral functions of the corresponding diagrams. Orig. art. has: 19 figures and 48 formulas.

ASSOCIATION: none

SUBMITTED: 04Feb65 ENCL: 00 SUB CODE: GP, NP

NR REF SOV: 005 OTHER: 003

Card 2/2

AZIMOV, Ya.I.; ANISOVICH, V.V.; ANSEL'M, A.A.; DANILOV, G.S.; DYATLOV, I.T.

Possible classification of elementary particles in the quartet model. Pis'. v red. Zhur. eksper. i teoret.fiz. 2 no.3:109-113 Ag '65. (MIRA 18:12)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR. Submitted June 3, 1965.

AZIMOV, Ya.I.; ANISOVICH, V.V.; ANSEL'M, A.A.; DANILOV, G.S.; DYATLOV, I.T.

On certain mass formulae in a quartet model. IAd. fiz. 2
no.3:583-584 S '65. (MIRA 18:9)

1. Fiziko-tekhnicheskiy institut im. A.F. Ioffe AN SSSR.

L 23016-66 EWT(m)/T

ACC NR: AP6014827 SOURCE CODE: UR/0367/65/001/006/1121/1126

AUTHOR: Azimov, Ya. I.--Azimov, J. I.; Gribov, V. N.; Danilov, G. S.; Dyatlov, I. T.

ORG: Leningrad Physicotechnical Institute im. A. F. Ioffe (Leningradskiy fizikotekhnicheskiy institut)

19 26 B

TITLE: Model of the three-particle unitary state for complex moments

SOURCE: Yadernaya fizika, v. 1, no. 6, 1965, 1121-1126

TOPIC TAGS: particle physics, nuclear model

ABSTRACT: An extension of three-particle amplitudes to complex moments is constructed on the basis of the non-relativistic Skornyakov - Ter-Martirosyan equation describing the contact pair-interaction of three identical particles (ZhETF, 31, 775, 1956). The exact three-particle unitary state is written for such a model. For arbitrary j this state contains additional terms in which the integration is performed with respect to non-physical values of the pairing energies. The authors thank A. A. Ansel'mo for useful discussions. Orig. art. has: 6 figures and 12 formulas. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 20Jan65 / ORIG REF: 004

Card 1/1 pla

84656

9.3210 (1013, 1031, 1067)

S/115/60/000/010/016/028
B021/B058

AUTHORS: Dyatlov, L. I. and Petrov, G. M.

TITLE: Using Operational Amplifiers for Increasing the Input Resistance of Measuring Circuits

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 10, pp. 49-52

TEXT: In order to avoid load errors, the circuit must possess a linear link, called matching circuit in the following explanations. This circuit has a transfer coefficient of 1 ± (0.01-0.1)%, a natural resistance of at least megohms and a low zero drift of below 1 mv. Special amplifier circuits were made for the purposes mentioned. In this paper, it is shown that the matching circuit may also be built up on the basis of two conventional operational amplifiers for d.c., which were put in the circuit with positive feedback. The principal matching circuit is shown next (Fig. 1); its fundamental equations are written down and the errors are analyzed. The dependence of the input resistance of the circuit on the values ΔK_2 for $K_1 = 1$ and $R_5 = 0.5$ megohm is shown in Fig. 2. The dependence of the absolute amplifier error on the inner resistance of the

Card 1/4

84656

signal source can be seen from Fig. 3. The inner resistance of the input signal source does not exert any influence on the input resistance of the matching circuit, but it influences considerably the errors conditioned by zero drift and mains current of the amplifier. In this connection it is considered suitable to use amplifiers with a lowest possible zero drift and low mains currents. The d.c. amplifier of the type УПТ-15 (UPT-15), developed by the otdel elektromodelirovaniya (Department of Electrical Simulation) of the NII schetmash (Nauchno-issledovatel'skiy institut schetnykh mashin (Scientific Research Institute of Computers), where the matching circuit was also tested (see Fig. 4), is considered to be the most suitable one. In conclusion, it is stated that the analysis and experimental investigation of the coordinating circuit by means of two operational d.c. amplifiers showed that the d.c. voltage sources may be coordinated by means of it. This holds for sources showing an inner resistance of maximum 10 megohms with circuits with an input resistance of up to 10 kiloohms. There are 4 figures and 5 references: 4 Soviet.

GRINYA, Ya.I.; DYATLOV, L.I.

Standardized operational amplifiers. Priborostroenie no.4:18-20 Ap '63.
(MIRA 16:4)

(Electronic analog computers) (Amplifiers (Electronics))

DYATLOV, M.

Repair of felt boots by vulcanization. Prom. koop. no.9:23 S '57.
(Boots and shoes--Repairing) (MIRA 10:9)
(Vulcanization)

DYATLOV, N.N.

Chelyabinsk Economic Region. Mashinostroitel' no.8:4-5 Ag '60.
(MIRA 13:9)

1. Zamestitel' nachal'nika Tekhnicheskogo upravleniya Chelyabinskogo sovnarkhoza.
(Chelyabinsk Province--Machinery industry)

DYATLOV, N. S., Master Med Sci --(diss) "Possibilities and methods of stamping out the cavernous forms of tuberculosis." Moscow, 1957, 19 pp.(Acad Med Sci USSR), [illegible] copies. (KL, No 40, 1957, p.95)

22 (1) SOV/27-59-2-22/30

AUTHOR: ~~Dyatlov, Petr, Fit~~ter-Builder

TITLE: The Builder must be a Fitter (Stroitel' dolzhen byt' montazhnikom)

PERIODICAL: Professional'no-tekhnicheskoye obrazovaniye, 1959, Nr 2, p 31 (USSR)

ABSTRACT: The author points out that fitter-builders are being poorly trained on the construction sites. As the fitter has become one of the leading building professions, the author recommends that fitter-builders be trained within the system of vocational education. The Glavmosstroy and other organizations have schools for preparing brigade leaders but there are none for training fitter-builders.

ASSOCIATION: Mosstroy

Card 1/1

ACCESSION NR: AR3004171 S/0271/63/000/005/B030/B030

SOURCE: RZh. Avtomatika, telemekhanika i vy*chisl. tekhnika, Abs. 5B158

AUTHOR: Gryaznov, N. I., Dyatlov, P. V.

TITLE: A magnetic operational memory with magnetic control (MOZU-1000). Some features of tuning commercial units

CITED SOURCE: Sb. Vy*chisl. i inform. tekhnika. M., 1962, 203-210

TOPIC TAGS: memory, magnetic memory

TRANSLATION: The MOZU-1000 is a Z-type system and has a capacity of 1024 48-position numbers. Cycling time is 30 μ sec. The delivery and regeneration time for numbers is ~ 8 μsec. To reduce the number of vacuum tubes, magnetic keys and magnetic current-shapers are used in the control. The coordinate network of the magnetic operative memory is supplied with power by an one-tube shaper, which feeds current to two series-connected selected coordinates. During the adjustment of the experimental model for various reasons the point-contact diodes of the magnetic shapers of the recording current were replaced by junction

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ACCESSION NR: AR3004171

diodes. Due to the saturation of junction diodes this necessitated commutation of the trailing edge of the current pulses. The calculations of the switching transformers of the magnetic keys agreed well with the experimental data. Some features of tuning of the recording and address-selection circuits are also presented. There are 4 figures and 2 references. O. B.

DATE ACQ: 25Jun63 SUB CODE: CP, SD ENCL: 00

Card 2/2

DYATLOV, S. A.

Breast-Pump

Hand-operated breast pump with a rubber bulb, designed by the author, Fel'd. i akush., No. 1, 1952.

2

SO: Monthly List of Russian Accessions, Library of Congress, March 1952, Uncl.

DYATLOV, S.A.

DYATLOV4S.A8 600

1. DYATLOV, S. A.

2. USSR (600)

4. Breast Pump

7. Breast pumps Akush. i gin. No. 2, 1952 Iz Instituta Akusherstva I Ginekologii (Dir. L. G. Stepanov) Ministerstva Zdravookhraneniya SSSR

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Unclassified.

DYATLOV, S.A.

[redacted]

Running water breast pump. Fel'dscher & akush. no. 11:42-46 Nov
1952. (CLML 23:3)

1. Candidate Medical Sciences.

DYATLOV, S.A.; STEPANOV, L.G., direktor; BELOSHAPKO, P.A., professor, nauchnyy rukovoditel'.

Sucking capacity of the newborn and an apparatus for its determination. Pediatriia no.2:33-36 Mr-Ap '53. (MLRA 6:5)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii Ministerstva zdravookhraneniya SSSR. (Infants (Newborn))

DYATLOV, S.A.

DYATLOV, S.A., kandidat meditsinskikh nauk (Moscow).

Prevention and treatment of nipple cracks with Ammargen baths.
Fel'd.i akush. no.12:36-39 D '53. (MLRA 6:12)
(Breast)

BORISOV, V.V., inzh., red.; NEMIROVSKIY, B.S., kand. voyen. nauk, red.; LETSKAYA, N.M., inzh., red.; SHIFRIN, A.Sh., inzh., red.; RUDENKO, L.D., inzh., red.; DYATLOV, T.D., inzh., red.

[Construction specifications and regulations]Stroitel'nye normy i pravila. Moskva, Stroiizdat. Pt.3. Sec.D. ch.11, Pt.3. Sec.M. ch.4. 1964. (MIRA 18:4)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Borisov). 3. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR(for Nemirovskiy, Shifrin). 4. Gosudarstvennyy proyektno-izyskatel'skiy i nauchno-issledovatel'skiy institut Grazhdanskogo Vozdushrogo Flota (for Letskaya). 5. Proyektnaya organizatsiya Gosudarstvennogo komiteta po sudostroyeniyu SSSR (for Dyatlov, Rudenko).

SEREDENKO, M.M., kand.ekon.nauk; KUGUSHEV, M.F. [Kuhushev, M.F.]; PRAVDIN, M.V.; FOMICHEV, V.I.; ALEKSANDROVA, V.P.; GORODETSKIY, N.I. [Horodets'kyi, N.I.]; ~~DYATLOV, T.I.~~; KALITA, M.S. [Kalyta, M.S.]; DARAGAN, M.V. [Darahan, M.V.]; RADINA, Yu.M.; VOROB'YEVA, K.T. [Vorobyova, K.T.]; LASTIVKA, N.N.; STARODUBSKIY, R.D. [Starodubs'kyi, R.D.]; YATSENKO, P.F.; MUROMTSEVA, G.M. [Muromtseva, H.M.]; RASNER, S.I.; CHERNYAK, K.I.; KOBILYAKOV, I.I. [Kobyliakov, I.I.]; ALEKSANDROVA, V.O., kand.ekonom.nauk, otv.red.; DEMIDYUK, V.F. [Demydiuk, V.F.], red.; LIBERMAN, T.R., tekhn.red.

[Ways of increasing profits in metallurgical industries] Shliakhy pidvyshchennia rentabel'nosti metalurgiinykh pidpryiemstv. Kyiv, Vyd-vo Akad.nauk URSR, 1961. 93 p. (MIRA 14:6)

1. Akademiya nauk USSR, Kiyev. Institut ekonomiki. 2. Institut ekonomiki AN USSR (for Seredenko, V.P.Aleksandrova, Kalita, Daragan, Radina). 3. Dnepropetrovskiy khimiko-tekhnologicheskiy institut (for Gorodetskiy, Dyatlov). 4. Dneprodzerzhinskiy metallurgicheskiy institut (for Kobilyakov).

(Dnepropetrovsk Province—Steel industry—Costs)

ACC NR: AP7000533 SOURCE CODE: UR/0386/66/004/010/0388/0393

AUTHOR: Dubovoy, L. V.; Dyatlov, V. D.; Fedyakov, V. P.

36

ORG: none

TITLE: Ion cyclotron resonance in a dense plasma with hot electrons

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 10, 1966, 388-393

TOPIC TAGS: plasma heating, plasma temperature, cyclotron resonance, electron temperature, ion energy

ABSTRACT: The authors report results of an experimental investigation of the properties of a dense plasma with preheated electrons in the ion-cyclotron resonance region. The experiments were made in a magnetic mirror trap. The electrons were heated by a direct turbulent discharge. The apparatus and the method of producing the hot-electron plasma were described earlier (Dokl. AN SSSR v. 167, 553, 1966). In the first part of the investigation, the cyclotron absorption of the energy of the probing high-frequency fields was used to measure the parameters of the ionic components of the plasma. These tests disclosed the presence of a narrow region (near 4.75 kOe) corresponding to single-particle resonance for hydrogen atoms, and the presence of absorption bands at stronger fields, connected with ion-cyclotron wave generation. The results suggest that the electrons escape the trap, but their temperature remains constant. In the second part of the experiment, an attempt was made to heat the ions

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L 10947-67

ACC NR: AP7000533

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with a short packet of powerful damped electromagnetic-field oscillations, which generated in the plasma a rapidly dissipating cyclotron wave of large amplitude. Oscillograms of the diamagnetic effect in the plasma showed clearly that ion heating took place in the plasma, the absorbed energy amounting to ~1 kev per ion. However, the decay time of the plasma with approximately equal ion and electron temperatures turned out to be approximately the same as for a plasma with cold ions. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 02Aug66/ ORIG REF: 001/ OTH REF: 002

Card 2/2

DYATLOV, V G.

57

PHASE I BOOK EXPLOITATION SOV/5460

Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Nekotoryye voprosy tekhnologii proizvodstva turbin (Certain Problems in the Manufacture of Turbines) Moscow, Mashgiz, 1960. 398 p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies printed.

Sponsoring Agency: RSFSR. Sovet narodnogo khozyaystva Leningradskogo ekonomicheskogo administrativnogo rayona, Upravleniye tyazhelogo mashinostroyeniya, and Leningradskiy dvazhdy ordena Lenina metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Ed. (Title page): G. A. Drobilko; Editorial Board: Resp. Ed.: G. A. Drobilko, B. A. Glebov, A. M. Mayzel', and M. Kh. Mernik; Tech. Ed.: A. I. Kontorovich; Managing Ed. for Literature on Machine-Building Technology: Ye. P. Naumov, Engineer, Leningrad Department, Mashgiz.

PURPOSE: This collection of articles is intended for technical personnel in turbine plants, institutes, planning organizations, as well as for production innovators.

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COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy zavod - Leningrad Metalworking Plant) in the manufacture of modern large-capacity turbines is presented. Methods for the rationalization of basic manufacturing processes and for the mechanization and automation of manual operations are given. Descriptions of attachments and tools designed by LMZ for improving labor productivity and product quality are provided, and advanced inspection methods discussed. References accompany some articles. No personalities are mentioned. There are 26 references: 25 Soviet and 1 English.

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Feygin, L. M. [Engineer]. A Machine for High-Temperature Friction Testing 353

Dyatlov, V. G. [Engineer]. Equipment for the Roll-Forming of [Lagging] Straps 359

Bol'shakov, B. A. The Replacement of Wooden Tracers by Cement Ones and by Rotary [Indexing] Devices 362

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Dodzin, L. I. [Engineer]. A High-Efficiency Method for Grinding Complex-Shaped Master Forms 369

Sazonov, G. A. Practice in Using the BTO-1 "Fogless" Spray Gun 374

VI. PRODUCTION CONTROL

L 8217-66 EWT(l)/EWG(m) IJP(c) AT

ACC NR: AT5022302 SOURCE CODE: UR/3137/64/000/069/0001/0010

44,55 44,55 44,55 56 B+

AUTHOR: Volkov, Ya. F.; Dyatlov, V. G.; Mitina, N. I.

44,55

ORG: Academy of Sciences UkrSSR, Physicotechnical Institute (Akademiya nauk UkrSSR, Fiziko-tekhnicheskiy institut)

TITLE: Investigation of a θ-pinch plasma with an azimuthal magnetic field

SOURCE: AN UkrSSR. Fiziko-tekhnicheskiy institut. Doklady, no. 069/P-023, 1964. Issledovaniye plazmy theta-pincha s azimutal'nym magnitnym polem, 1-10

21,44,55

TOPIC TAGS: plasma containment, helium plasma, plasma heating

ABSTRACT: A theta-pinch device was used to study the ion and electron energy distributions and the processes leading to the energy exchange between electrons and ions during the compression phase. A large spherical (110 mm diameter) vessel containing helium was placed within magnetic mirror coils. The magnetic field with a period of $30 \cdot 10^{-6}$ sec reached a peak value of 16 koe. Additionally, an azimuthal magnetic field was added $30 \cdot 10^{-6}$sec earlier by means of an axial conducting rod carrying a current of up to 100 ka. The average and time-resolved ion temperature was obtained by determining the Doppler broadening of N and H_e spectral lines from several discharges

An additional photomultiplier system was used for electron and ion temperature determination during one discharge. The upper limit on the electron temperature was es-

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L 8217-66
ACC NR: AT5022302

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tablished by the observation of the soft X-rays which were analyzed by a set of thin metal foils. Radio noise (3 cm wavelength) of one watt intensity was observed in a waveguide receiver. The temperature measurements were carried out in the pressure range of 1 to $2 \cdot 10^{-3}$ mm Hg. An ion temperature of 100 ev and electron temperature of 4 kev were reached. The heating mechanism is ascribed to the microwave noise and small value of the Coulomb collision crossections. It was also noted that the azimuthal field has a gross stabilizing effect and also extends the plasma containment time. Orig. art. has: 6 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 003

2/2

L 06309-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) AT/JD/GD

ACC NR: AT6020456 (N) SOURCE CODE: UR/0000/65/000/000/0241/0248

AUTHOR: Volkov, Ya. F.; Dyatlov, V. G.; Mitina, N. I.

58

B+1

ORG: none

TITLE: Investigation of a θ-pinch plasma with an azimuthal magnetic field

SOURCE: AN UkrSSR. Vzaimodeystviye puchkov zaryazhennykh chastits s plazmoy (Interaction of charged particle beams with plasma). Kiev, Naukova dumka, 1965, 241-248

TOPIC TAGS: plasma pinch, plasma heating, theta particle, plasma magnetic field, Coulomb collision, ion temperature, helium plasma, gamma radiation

ABSTRACT: Theta-pinch discharge was investigated experimentally to obtain information on the ion and electron energies associated with accelerated beams in plasma emitting strong γ-radiation (500 kev range, 10^{13} quanta/discharge). A helium plasma in a spherical vessel was used for this study. The plasma was subjected to an azimuthal magnetic field obtained in the hard-core configuration and ($3 \cdot 10^{-5}$ sec later) in an axial field from the superimposed four-turn coils. The diagnostics consisted mainly of measuring Doppler broadening of the spectral lines for ion energy determination and measurement of the relative intensities of two He lines gave the electron temperature. These measurements were made for several regions in the plasma. Very rapid growth of the ion temperature was found to eliminate Coulomb collisions as a heating mechanism.

L 06309-67

ACC NR: AT6020456

It was therefore assumed that beam instability was responsible for rapid heating. This assumption was substantiated by observing rather strong emissions of microwave radiation in the experiments with azimuthal and axial fields. The microwave noise tended to cluster in the frequency range of the electron, plasma and cyclotron frequencies. In addition, the azimuthal field was found to stabilize the plasma due to changed compression conditions. Orig. art. has: 6 figures.

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 003/ OTH REF: 003

Card 2/2 gd

L 54763-65 EWT(1)/EPF(n)-2/EWG(m)/EPA(w)-2 Pz-6/Po-4/Pab-10/Pi-4 IJP(c) WW/AT

ACCESSION NR: AP5015626 UR/0057/65/035/006/1039/1043

26
55
B

AUTHOR: Volkov, Ya.F.; Dyatlov, V.G.; Mitina, N.I.

TITLE: Investigation of a theta pinch plasma in an azimuthal magnetic field 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 1039-1043

TOPIC TAGS: plasma heating, plasma instability, plasma oscillation, plasma pinch, azimuthal magnetic field, ion temperature, electron temperature

ABSTRACT: The authors have measured ion and electron temperatures in a helium plasma in an external azimuthal magnetic field. The measurements were undertaken because of the earlier discovery of hard gamma radiation from such plasmas (Ya.F.Volkov, V.T.Tolok and K.D.Sinel'nikov, ZhTF 32,811,1962). The plasmas were produced in an 11 cm diameter cylindrical glass vessel containing helium at approximately 10^{-3} mm by the 20 kV discharge of an 18 micro fd capacitor through two windings of four turns each. The period of the resulting magnetic

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L 54763-65

ACCESSION NR: AP5015626

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field was 30 microsec and the amplitude reached 16 kOe. The azimuthal magnetic field was provided by the 3 kV discharge of a 2400 microfd capacitor through a copper rod traversing the vessel. The period of this system was 425 microsec and the current reached 100 kA. The ion temperatures were determined from the Doppler broadening of several lines in the optical spectrum and the electron temperatures were determined from the relative intensities of two or more lines. The time variation of the temperatures was followed by measuring at different phases of different discharges. The average ion temperatures were of the order of 40 to 60 eV. Electron temperatures exceeding 1 keV were observed. Soft x-ray absorption measurements indicated that electron temperatures greater than 4 keV did not occur. Radio noise of the order of 1 W was observed at 3 cm wavelength. The time dependence of the ion and electron temperatures was characterized by a rapid rise to a maximum within a few microseconds and a subsequent decrease. The electron temperature showed a small secondary maximum at about 6 microsec. The rapid rise of the ion temperature cannot be accounted for by collisions with electrons; it is as-

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L 54763-65

ACCESSION NR: AP5015626

cribed to plasma instability involving pulsations at approximately the Langmuir frequency. "The authors express their gratitude to V. T.Tolok for suggesting the topic, offering valuable advice and discussing the results." Orig.art.has: 6 figures.

ASSOCIATION: none

SUBMITTED: 04Jul64

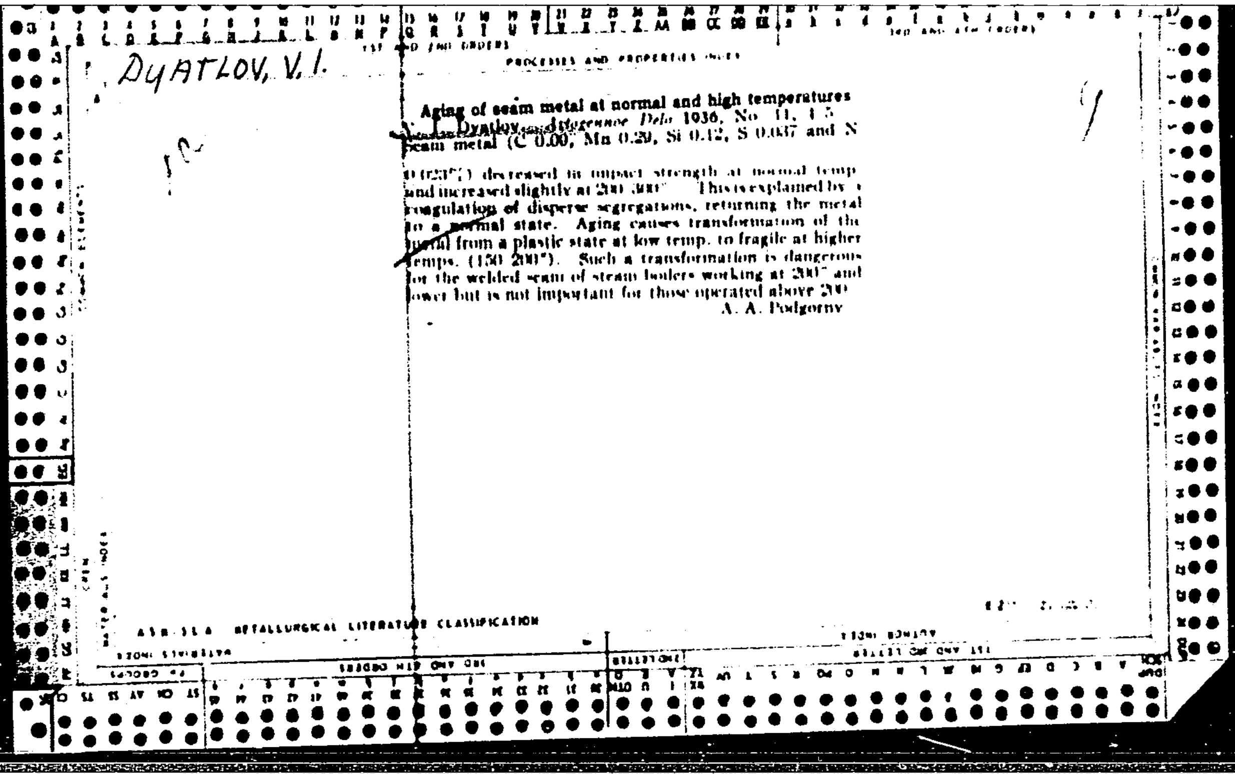
ENCL: 00

SUB CODE: ME,EM

NR REF SOV: 003

OTHER: 003

Card 3/3



Dyatlov, V. I.

PROCESSES AND PROPERTIES INDEX

Aging of seam metal at normal and high temperatures

V. I. Dyatlov. *Avtogennoe Delo* 1036, No. 11, 1-5.—Seam metal (C 0.00, Mn 0.29, Si 0.12, S 0.037 and N 0.0235) decreased in impact strength at normal temp. and increased slightly at 200-300°. This is explained by coagulation of disperse segregations, returning the metal to a normal state. Aging causes transformation of the metal from a plastic state at low temp. to fragile at higher temps. (150-200°). Such a transformation is dangerous for the welded seam of steam boilers working at 200° and lower but is not important for those operated above 200.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

DYATLOV, V. I. & T. M. SLUTSK'KA

Rozrobka elecktrodnykh pokryt' dlia zvariuvannia khromonikel'ovoi nerzhavifuchoi stali. Kyiv, AN USSR, 1937. 23 p. illus.

Development of electrode coating for welding chrome-nickel stainless steel.
DLC: TK4660. D45

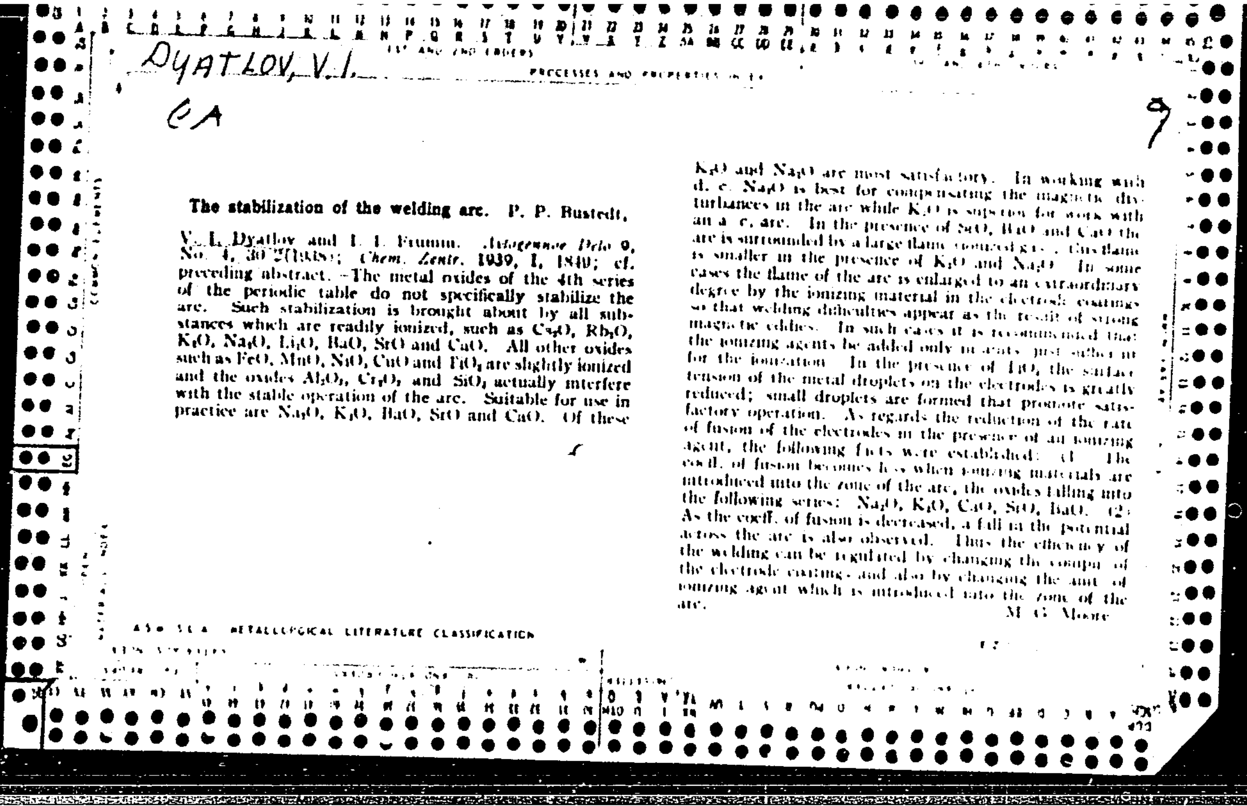
SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

DYATLOV, V. I. & I. I. FRUMIN

Vygotovlennia tovstykh elektrodnykh pokryt z syntetychnykh shlakiv. Kyiv, An USSR, 1938. 65 p. illus.

Manufacturing thick electrode coating out of synthetic slag.
DLC: TK 4660. D47

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.



DYATLOV, V.I.

PROCESSES AND PROPERTIES INDEX

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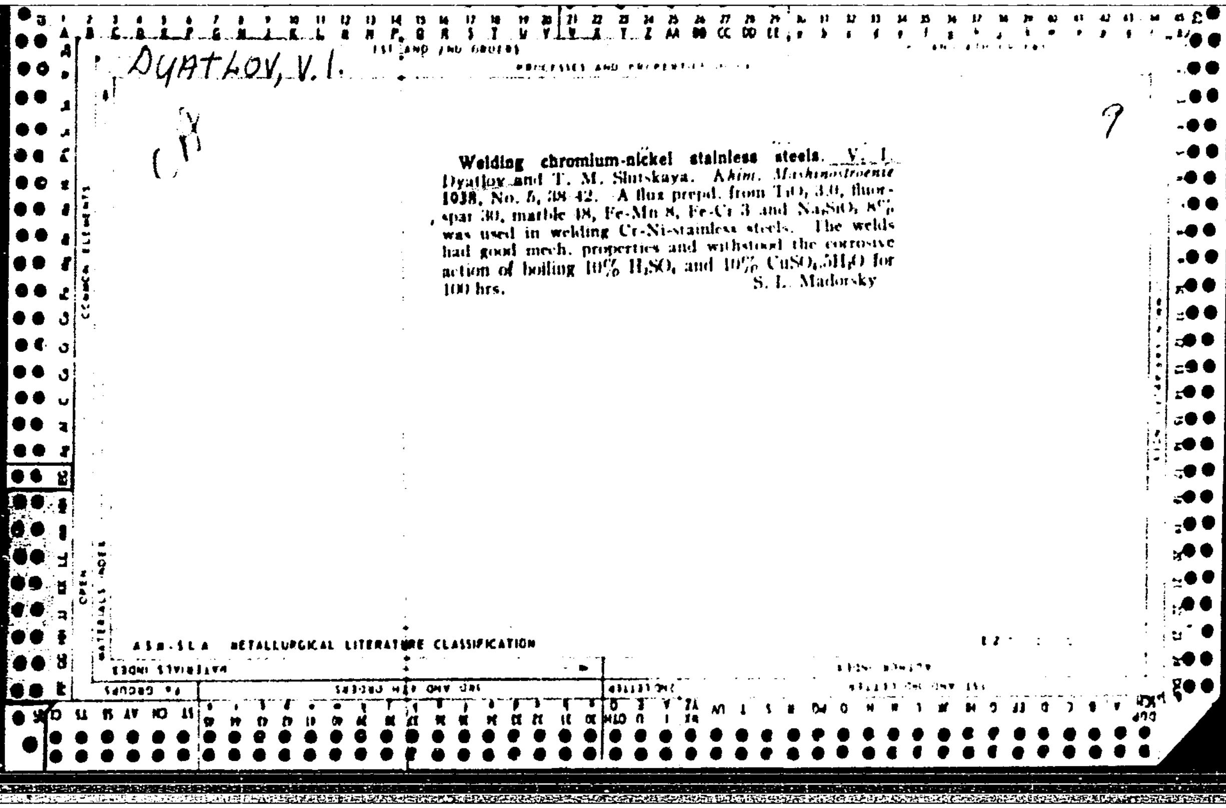
The stabilization of the welding arc. P. P. Bustedt, V. I. Dyatlov and I. I. Frumin. *Avtogennoe Delo* 9, No. 4, 30-2(1938); *Chem. Zentr.* 1939, I, 1840; cf. preceding abstract.—The metal oxides of the 4th series of the periodic table do not specifically stabilize the arc. Such stabilization is brought about by all substances which are readily ionized, such as Cs_2O, Rb_2O, K_2O, Na_2O, Li_2O, BaO, SrO and CaO. All other oxides such as FeO, MnO, NiO, CuO and TiO_2 are slightly ionized and the oxides Al_2O_3, Cr_2O_3 and SiO_2 actually interfere with the stable operation of the arc. Suitable for use in practice are Na_2O, K_2O, BaO, SrO and CaO. Of these K_2O and Na_2O are most satisfactory. In working with d. c. Na_2O is best for compensating the magnetic disturbances in the arc while K_2O is superior for work with an a. c. arc. In the presence of SrO, BaO and CaO the arc is surrounded by a large flame (ionized gas). This flame is smaller in the presence of K_2O and Na_2O. In some cases the flame of the arc is enlarged to an extraordinary degree by the ionizing material in the electrode coatings so that welding difficulties appear as the result of strong magnetic eddies. In such cases it is recommended that the ionizing agents be added only in amts. just sufficient for the ionization. In the presence of TiO_2 the surface tension of the metal droplets on the electrodes is greatly reduced; small droplets are formed that promote satisfactory operation. As regards the reduction of the rate of fusion of the electrodes in the presence of an ionizing agent, the following facts were established: (1) The coeff. of fusion becomes less when ionizing materials are introduced into the zone of the arc, the oxides falling into the following series: Na_2O, K_2O, CaO, SrO, BaO. (2) As the coeff. of fusion is decreased, a fall in the potential across the arc is also observed. Thus the efficiency of the welding can be regulated by changing the compn. of the electrode coatings and also by changing the amt. of ionizing agent which is introduced into the zone of the arc.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Dyatlov, V. I.

9

Welding chromium-nickel stainless steels. V. I. Dyatlov and T. M. Slutskaya. *Khim. Mashinostroenie* 1938, No. 5, 38-42. A flux prepd. from TiO_2 30, fluorspar 30, marble 18, Fe-Mn 8, Fe-Cr 3 and Na_2SiO_3 8% was used in welding Cr-Ni-stainless steels. The welds had good mech. properties and withstood the corrosive action of boiling 10% H_2SO_4 and 10% $CuSO_4 \cdot 5H_2O$ for 100 hrs.
S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Dyatlov, V.I.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

9

Repairing of railroad frogs by welding. V. I. Dyatlov and N. A. Gorpenyuk. *Acad. Sci. Ukrain. S. S. R., Inst. Elec. Welding* No. 60, 3-35(1939).—Ordinary low-C electrodes were used and the necessary hardness was obtained by alloying the weld metal with Cr, Mn and Mo by addns. to the electrode coating. Best results were obtained with electrode coating contg. $CaCO_3$ 40, CaF_2 14, TiO_2 3, Fe-Cr 11, Fe-Mn 24 and water glass 8%. B. Z. Kamich

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

18(7)

SOV/125- 59-5-8/16

AUTHOR: Dyatlov, V.I., Candidate of Technical Sciences, and
Kopersak, N.I., Engineer

TITLE: On the Brittle Nature of Chrome-Nickel Stainless Steel at 475°C

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 5 (74)
pp 66-82 (USSR)

ABSTRACT: The article presents a discussion on the development of brittleness ar 475°C in the weld metal containing 27.8% Cr and 9.7% Ni (65% α-phase). Described are the theories of Heger (Ref. 4) and Cina and of Lavender (Ref.8). The works of Lena and Hawkens (Ref. 2,3), Becket (Ref. 11), Zapffe and others (Ref. 7), Gosso (Ref. 6) and Newell (Ref. 13) are discussed. Some parts of the works of Kintzel and Franks are also presented. An experimental investigation of the alternating of microstructure, the impact strength, the microhardness of the ferrite and austenite phase and of the magnetic saturation were made. Investigated were also the deve-

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SOV/125-~~58~~-5-8-16

On the Brittle Nature of Chrome-Nickel Stainless Steel at 475°C

lopment of Homogenization, the micro structure, microhardness and impact strength after heat treatment. For the investigation a weld metal was used, which was gotten by multiplied welding of steel 1 Kh/9N9T with wire type Co-0Kh18N9. The welding was done under keramic flux and the following conditions: I = 600 -650 A, U = 28 -30 V, V = 25 m/h. The alternating of the microstructure of the metal was made by electrolytic etching in 10% oxalic acid (Fig. 2,3). To the authors there seems to be a possibility to set up following hypothesis, with the results of the experiment on the 475°-embrittlement: The brittle condition is caused by a process of interphase redistribution of the chrome in high alloyed chrome -iron, without separation of the surplus phases. There exists a narrow connection between the 475°C- brittleness and the development of σ-phase, which takes place at a higher temperature. The interphase redistribution of chrome, which causes the 475°-embrittlement. can be regarded as an "incuba-

Card 2/3

59
SOV/125-[illegible]-5-8/16

On the Brittle Nature of Chrome-Nickel Stainless Steel at 475°C

tion" of the development of -phae. To eleminate the 475°C-brittleness, only the same way as eliminating the -phase is possible: To heat to temperature higher than 1000°C with added speedy cooling (Fig.5). There are 5 graphs, 5 figures, 2 tables and 15 references, 5 of which are Soviet, 7 English, 2 German and 1 French

ASSOCIATION: Kiyevskiy ordena Lenina politekhnicheskiy institut (Kiyev Polytechnical Institute of the Order of Lenin).

SUBMITTED: February 11, 1959

Card 3/3

BORT, M.M., kand.tekhn.nauk; BYALOTSKIY, L.A., inzh.; VASIL'YEV, G.V., inzh.; VOSHCHANOV, K.P., inzh.; GAPCHENKO, M.N., kand.tekhn.nauk; GORPENYUK, N.A., kand.tekhn.nauk; GREBEL'NIK, P.G., kand.tekhn.nauk; DYATLOV, V.I., kand.tekhn.nauk; TROCHUN, I.P., kand.tekhn.nauk; KHRENOV, K.K., akademik; SOROKA, M.S., red.

[Electric welder's handbook] Spravochnik elektrosvarshchika. Izd.3., perer. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. 748 p. (MIRA 14:6)

1. AN USSR (for Khrenov).
(Electric welding)

DYATLOV, V.I.

Volt-ampere characteristic of a confined electric arc. Avtom. svar. 14 no.1:17-23 Ja '61. (MIRA 14:1)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut.
(Electric arc)

22233
S/125/61/000/001/002/016
A161/A133

1.2300 also 1454
26.2311

AUTHOR: Dyatlov, V.I.

TITLE: The volt-ampere characteristics of the pinched electric arc

PERIODICAL: Avtomaticheskaya svarka, no. 1, 1961, 17-23

TEXT: A calculation method is suggested that makes possible the determination of the basic arc parameters in numerical values. The term "pinched" applies to any arc the column of which cannot expand freely (small electrode diameter, arc inside a narrow tube, cooled from outside, etc.). The simplifying assumptions used in the calculations proved permissible, for the calculated and the experimental data matched. The assumptions are: 1) Strict thermodynamic equilibrium in all zones of the stable arc. The ionization of arc plasma determined by the known M.N. Sag (Russian spelling) formula. 2) The generator setting is constant, and the current, electric field and gas temperature in the arc are constant. 3) The arc column is a cylinder whose surface is the boundary between the gas with a constant temperature and an ambient space with a zero temperature. 4) All heat losses are reduced to ra-

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A161/A133

The volt-ampere characteristics ...

diation loss by the outer cylinder surface. 5) The current in the arc is carried by electrons only. These assumptions enabled K.K. Hrenov to calculate the arc column temperature (Ref.1, Electric welding arc, Mashgiz, 1949), and G.I. Leskov and G.I. Pogodin-Alekseyev - the electric field intensity in the arc column (Ref.2, Their article in "Avtomaticheskaya svarka", No.5, 1958). The initial data for the calculation are the formulae of M.N. Sag, Stefan-Boltzmann, and Langevin. The formulae (6), (9), (12), (14) and (15) derived in this article make possible the calculations of volt-ampere characteristics for a wide range of current intensity. These formulae are the following. For arc temperature (Ref.1) and field intensity (Ref.2):

$$T = \frac{2eU_i}{29R} = DU_i \quad \text{(grad)}; \qquad (5)$$

$$E = \frac{C\delta^{3/4} P^{1/4} U_i^{11/12}}{I^{1/3}} \quad \text{(v/cm)}, \qquad (6)$$

where D is a constant equal 800; U_i - ionization potential, volt; C - a constant = $1.42 \cdot 10^5$; I - welding current, amp.

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S/125/61/000/001/002/016
A161/A133

The volt-ampere characteristics ...

$T^{1/4}x^{1/2}=\left[\frac{1}{\sqrt{2G\sigma}}\right]\delta r_c^{1/2}i$, (9), where $\frac{1}{\sqrt{2G\sigma}}=1{,}46\cdot10^{10}$; x - the ionization degree; δ - the gas molecule diameter in cm. $U_\kappa=H\left(\frac{m_i^{1/8}}{\delta^{3/8}p^{1/8}}\right)\beta^{1/8}(1-f)^{1/8}U_i^{3/8}I^{-1/8}$ (v), (12) where H is a constant = $5.47\cdot10^{-22}$; m - the ion mass, gram; (1 - f) - the ion current share on the cathode.

$$U_\kappa=k\left(\frac{r_c^{1/21}}{p^{1/8}}\right)\left(\frac{m_i^{1/8}}{\delta^{40/21}}\right)(1-f)^{1/8}\frac{i^{10/7}}{x^{1/21}}\quad(\mathrm{v}),\qquad(14)$$

where k is a constant = $2.4\cdot10^{-12}$. $U_a=a+b\,(i-i_{cr})^c$, (15), where i_{cr} is the critical current density, amp/cm^2. The formula (15) is developed by Sun Tzu-Tseng (Ref. 5: Dissertation, KPI, 1960). The formula (12) is the expression of the cathode voltage drop for a free arc, and formula (14) for a pinched arc; (15) expresses the relation between the anode voltage drop and the arc current density. Conclusions: 1) The simplifying assumptions make it possible to obtain data sufficiently close to empirical ones, and the approximate calculation method may be applied for pinched arcs. 2) The arc can be in three different states at current variations in a wide range: a) free arc state, when the arc column can spread freely with rising current. This state is characterized by a constant

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temperature in the arc, low ionization of the plasma, falling characteristic of the electric field, and cathode voltage drop; b) pinched state, when the arc column does not expand with the rising current. The plasma temperature rises, the ionization of the arc column increases, the electric field characteristic is falling, and the cathode and anode voltage drop characteristic rising; c) pinched high-ionized arcs with high plasma temperature and practically complete ionization of the gas. The characteristic of all major arc zones (column, anode space and cathode space) is rising. The arc behaves like a common conductor, and all processes in it cease to depend on the current polarity, electrode material, and gas compounds in the arc: 3) All automatic, semi-automatic submerged, or shielded-gas welding processes, as well as heating processes by plasma are processes with pinched arc. The further theoretical and experimental investigations of the pinched arc conditions are, therefore, of considerable practical interest. There are 4 figures and 5 Soviet-bloc references.

ASSOCIATION: Kiyevskiy ordena Lenina politekhnicheskiy institut (Kiyev "Order of Lenin" Polytechnic Institute)

Card 4/6

DYATLOV, V.I.

Effect of temperature on changes in the composition of gases used in gas-arc welding. Avtom. svar. 15 no.9:89 S '62.
(MIRA 15:9)

(Electric welding) (Protective atmospheres)

BAGRYANSKIY, Konstantin Vladimirovich; KUZ'MIN, Gennadiy Sergeyevich;
DYATLOV, V.I., kand. tekhn. nauk, retsenzent; GORNOSTAYPOL'SKAYA,
M.S., tekhn. red.

[Welding nickel and its alloys] Svarka nikelia i ego splavov.
Moskva, Mashgiz, 1963. 163 p. (MIRA 16:10)
(Nickel--Welding)

DYATLOV, V.I.

AID Nr. 995-9 21 June

MAGNETIC CONTROL IN MIG WELDING (USSR)

Deminskiy, Yu. A., and V. I. Dyatlov. Avtomaticheskaya svarka, vol 16 no. 4,
Apr 1963, 82-83. S/125/63/000/004/009/011

Kiyev Polytechnic Institute has developed a method for the magnetic control of arc motion during the MIG welding of aluminum-magnesium alloys. An electromagnet attached to the welding gun creates an alternating magnetic field (frequency; 50 cps) directed along the axis of the weld, causing the arc to oscillate transversely with respect to the axis. With an input of 60 w (magnetizing current, 7 amp), a magnetic flux with a density of 40 gauss is developed. The arc oscillation increases the puddle width and reduces the depth of penetration and the length of the solidifying zone. This in turn decreases shrinkage and gas porosity, reduces the size of intermetallic Al-Mg inclusions (formed during welding with high heat input), and refines the grain structure, especially near the fusion zone. Mechanical properties of the joint are also improved. For

Card 1/2

AID Nr. 995-9 21 June

MAGNETIC CONTROL IN MIG WELDING [Cont'd] S/125/63/000/004/009/011

instance, AMг6-alloy [6.0-7.0% Mg, 0.6-0.75% Mn, 0.10-0.30% Ti] weld metal deposited with magnetic arc control had a tensile strength of 32.0-33.7 kg/mm^2, yield strength of 14.3-15.7 kg/mm^2, elongation of 14.2-16.2%, and reduction of area of 19.5-24.0%. Corresponding figures for the conventionally deposited weld metal were 30.0-31.6 kg/mm^2, 13.7-14.1 kg/mm^2, 11.2-14.1%, and 15.8-19.5%. The method is also applicable in the case of other nonmagnetic or slightly magnetic metals. [WB]

Card 2/2

DYATLOV, V.I.

Possibility of calculating the characteristics of welding arcs. Avtom. svar. 16 no.7:66-69 Jl '63. (MIRA 16:8)

1. Kiyevskiy politekhnicheskiy institut.
(Electric welding)

ACCESSION NR: AP4040694 S/0135/64/000/006/0004/0008

AUTHORS: Dyatlov, V. I. (Candidate of technical sciences); Deminskiy, Yu. A. (Engineer)

TITLE: Arc welding of aluminum alloys by high-power arcs under argon

SOURCE: Svarochnoye proizvodstvo, no. 6 (630), 1964, 4-8

TOPIC TAGS: arc welding, argon, fusion coefficient/ AMg5V aluminum alloy, AMg6 alloy

ABSTRACT: Melting of the electrodes and the base metal during arc welding of aluminum alloys AMg5V and AMg6 under argon was studied, and recommendations for this process are given. It was found that the efficiency of welding could be increased by increasing the diameter of electrodes and using a current of 550-580 amps. The fusion coefficient of electrode wires made of the above alloys was found to be about 10 g/amp·hr and was independent of the diameter of the wire or the welding current. In spite of the high volt-ampere characteristics of the welding arc, the process of its self-regulation was quite unstable. However, an automatic attachment for governing the speed of input in relation to the intensity of the arc provided the necessary smoothness of the welding process. It was found that the

ACCESSION NR: AP4040694

use of electrodes with large diameter saved up to 40% of argon. Orig. art. has: 9 formulas, 5 figures, and 2 tables.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiev Polytechnic Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 008

OTHER: 003

Card 2/2

L 52222-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5010127 UR/0167/65/000/001/0077/0084

23
22
B

AUTHORS: Abralov, M. A.; Dyatlov, V. I.

TITLE: New method for a study of hot cracks' formation during the crystallization of alloys

[illegible] SSSR. Izvestiya. Seriya tekhnicheskikh nauk, [illegible] 1965, 77-84

[illegible] tin, lead, alloy, metallurgy

[illegible] metals were studied: [illegible]% pure [illegible] and [illegible] tin with [illegible]

[illegible] the explanation. It is [illegible] number and the

Card [illegible]

L 52222-65

ACCESSION NR: AP5010127

[illegible] cracks generally depend on a relat[illegible] interval of brittle-
[illegible] having low plasticity [illegible]
[illegible] known, contradictory hypotheses on the formation of cracks. Orig. art.
[illegible] and [illegible] tables.

[illegible] Kiyevskiy ordena Lenina politekhnicheskiy institut (Kiev [illegible] of
[illegible] Institute)

[illegible]

[illegible] OTHER: [illegible]

Card 2/4

L 65082-65 EPA(s)-2/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/WW/JG

ACCESSION NR: AP5021219 UR/0125/65/000/008/0011/0014

621.791.0:621.746.76

AUTHOR: Dyatlov, V. I. (Doctor of technical sciences), Abralov, M. A. (Engineer)

TITLE: Investigating the formation of polygonization cracks: techniques and findings

51
42
B

SOURCE: Avtomaticheskaya svarka, no. 8, 1965, 11-14

TOPIC TAGS: polygonization crack, crack formation, hot crack, welding crack, weld joint, dilatational strain, solidus, intercrystalline fracture, crystallite, dislocation boundary, near eutectic metal

ABSTRACT: There is no common consensus on the causes of the formation of hot cracks during welding. Thus while some investigators attribute these cracks to the existence of a residual liquid phase in the interstices in between the crystals of the already solidified part of the molten pool and the consequent formation of cracks in the weld joints as a result of relative displacement of the crystals during dilatational strains, others reject this concept and extend the temperature range of the possible appearance of these cracks to the region of lower temperatures, even below the solidus. Furthermore, Movchan (Avtomaticheskaya svarka, no. 6, 1956) shows that physical and chemical inhomogeneities develop in the process of crystallization of the weld joint and at the same time crystal-lattice defects (dis-

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L 65082-65
ACCESSION NR: AP5021219

locations) appear beyond the crystallization front (below the solidus); these defects may accumulate in energetically convenient locations, i.e. form polygonization boundaries. Intercrystalline fracture in weld joints with monophase structure [illegible] these boundaries. To verify these theories, the authors investigated [illegible] a specially developed method the process of formation of crystallization cracks forming in the presence of solid and liquid phases during [illegible] crystallization and polygonization cracks (cracks associated with the formation of new boundaries -- granulation of the solidified metal as a result of polygonization) during the crystallization of pure tin (99.9% Sn), its alloys with Pb of eutectic composition (64.4% Sn, 35.3% Pb) and alloys with a large crystallization interval ([illegible].2% Sn, 22.5% Pb). The method of investigation was based on creating a stationary temperature field on a thin plate of the investigated metal, with the aid of a linear heat source (a rod of stainless steel of 4.5 mm diameter, heated [illegible] 500 a) moved over the plate so as to obtain a circular molten pool [illegible]. Following its crystallization, the plate was tested in a tensile [illegible] machine, its deformations being simultaneously observed with the aid of a [illegible] camera mounted on one of the eyepieces of a binocular microscope with a specified magnification. Comparison of the film frames with the temperature field recorded by the thermocouples yielded data on the site and temperature of

Card 2/3

L 65082-65
ACCESSION NR: AP5021219

3

crack generation as well as on position of crack with respect to the crystallites and minimal plasticity of the metal. It was thus found that on the crystallization of the melt of technically pure tin the polygonization (dislocation) boundaries form in the range of 25-35°C below the solidus, i.e., at 197-200°C; this gives rise to crack formation. Thus, Movchan's hypothesis is confirmed. Overall conclusions: 1) cracks in technically pure metal form at below-solidus temperatures when the metal is in solid state; 2) cracks in alloys with a relatively large crystallization interval form at above-solidus temperature, when the metal is in solid-liquid state; 3) cracks in near-eutectic metal form at below-solidus temperatures. Orig. art. has: 3 figures, 1 table.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiev Polytechnic Institute)

SUBMITTED: 10Dec64 ENCL: 00 SUB CODE: SS, MM

NR REF SOV: 009 OTHER: 002

Card 3/3

L 9539-66 EWT(d)/EWT(m)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWP(l)/
ACC NR: AP5026287 EWA(c)/ETC(m) SOURCE CODE: UR/0125/65/000/010/0001/0006
MJW/JD/WW/HM

AUTHOR: Dyatlov, V. I. (Doctor of technical sciences); Sidoruk, V. S. (Engineer) 46

ORG: Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut) B

TITLE: Effect of technological conditions of welding on the proneness to form hot cracks

SOURCE: Avtomaticheskaya svarka, no. 10, 1965, 1-6 15

TOPIC TAGS: hot crack, butt welding, welding technology, X ray detection, weld defect, weld evaluation 4 14

ABSTRACT: Longitudinal hot cracks form as a result of transverse deformations during welding, at the moment when the temperature range is such that the plasticity of the metal decreases and hence also the number of plastic deformations developed in the weld metal decreases. Proceeding from this premise, the author experimentally investigated the welding conditions under which the desired weld properties may be attained. 8 mm thick plates of MSt.3 steel were butt-welded on a flux cushion by means of a welding rod, with the presence of hot cracks being determined by means of a radiographic examination of the welded joints. It was established that the number of specimens with cracks and their length are indeed greatly affected by technological conditions: welding regime, dimensions and shape of weld, strength of the welding

Card 1/2 UDC: 621.791.016:620.191.32

L 9539-66

ACC NR: AP5026287

O

metal, sequence of welding operations, etc. This indicates that technological conditions affect the deformation field and hence also affect the mechanism of the formation of hot cracks. This mechanism may be controlled by correspondingly adapting the technological conditions. Thus, the following methods of preventing hot cracks may be proposed: application of long (up to 300 mm) tack welds; welding in segments with brief pauses -- the optimal pause is at the end of a weld: the final segment of a weld 200-300 mm long should be the first to be welded, with the welding performed in the direction from edges to the center line: and the regions adjoining the weld should be correspondingly heated during the welding. Orig. art. has: 2 figures, 5 tables.

SUB CODE: 11,13/ SUBM DATE: 23Nov64/ ORIG REF: 002/ OTH REF: 000

gc

2/2

Card

ABRALCV, M.A.; DYATLOV, V.I.

New methods of investigating the formation of hot cracks during the crystallization of alloys. Izv. AN Uz.SSR. Ser. Tekh. nauk 9 no. 1:77-84 '65 (MIRA 19:1)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut. Submitted May 15, 1964.

DYATLOV, V.I.; ABRALOV, M.A.

Methods and results of a study of polygonization cracking.
Avtom. svar. 18 no.8:11-14 Ag '65. (MIRA 18:11)

1. Kiyevskiy politekhnicheskiy institut. Submitted December 10, 1964.

L 24703-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c) JD/JH

ACC NR: AP6008683 SOURCE CODE: UR/0167/66/000/001/0061/0066

59
B

AUTHORS: Dyatlov, V. I.; Abralov, M. A.

ORG: Kiev Polytechnical Institute (Kiyevskiy politekhnicheskiy institut); Tashkent Polytechnical Institute (Tashkentskiy politekhnic eskiy institut)

TITLE: Investigation of the plastic properties of technical aluminum during its crystallization from the melt 18 27

SOURCE: AN UzSSR. Izvestiya. Seriya tekhnicheskikh nauk, no. 1, 1966, 61-66

TOPIC TAGS: gas turbine, metal crystal, plasticity, brittleness, aluminum, metallurgic testing machine, metal crystallization/ AVOO aluminum

ABSTRACT: This investigation was conducted to test the hypothesis concerning the intercrystalline strength of metals, proposed by N. N. Prokhorov (Goryachiye treshchiny pri svarke, Mashgiz, 1952). The change in the elastic properties of aluminum AVOO during its crystallization from the melt was determined. The experimental procedure followed has been described earlier by M. A. Abralov and V. I. Dyatlov (Izv. AN UzSSR, 1964, No. 1). A schematic of the experimental installation is presented, and the experimental results are shown graphically (see Fig. 1). It is concluded that for melts consisting of a single phase the brittleness of the metal during crystallization is caused by the formation of polygonic boundaries in the solid. The temperature interval of brittleness for a single phase melt was found to be lower

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Card 1/2

L 24703-66

ACC NR: AP6008683

D

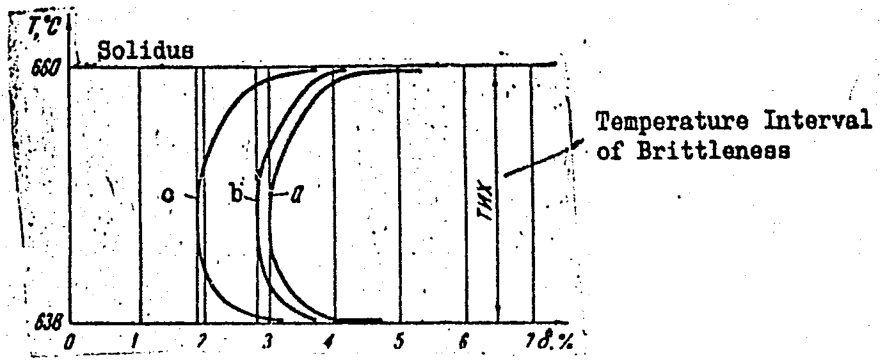

Fig. 1. Influence of the rate of deformation on the change in plasticity in the brittleness temperature interval: a - rate of deformation - 22 mm/min; minimum plasticity - 3%; b - rate of deformation 40 mm/min; minimum plasticity - 2.8%; c - rate of deformation - 60 mm/min; minimum plasticity 1.9%.

than the temperature of the solidus. The plasticity in the above temperature interval is low and decreases with increase in the rate of forced crystal deformation in the melt. Orig. art. has: 5 graphs.

SUB CODE: 11/ SUBM DATE: 02Feb65/ ORIG REF: 007/ OTH REF: 004

Card 2/2

ACC NR: AP7004193 (N) SOURCE CODE: UR/0125/67/000/001/0026/0030

AUTHOR: Dyatlov, V. I.; Abralov, M. A.; Shnayder, B. I.

ORG: [Dyatlov; Abralov] Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut); [Shnayder] Electric Welding Institute im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki)

TITLE: Primary crystallization in the metal bath during the welding of light gage material

SOURCE: Avtomaticheskaya svarka, no. 1, 1967, 26-30

TOPIC TAGS: crystallization, metal crystallization, metal crystal, metal inspection, metal welding

ABSTRACT: A welding bath crystallization process, which occurs during low voltage arc welding of light-gage metals (0.2 to 0.1 mm), has been recorded cinematographically. Crystallization begins at the edges of the bath and proceeds stepwise, at low welding speeds, from one fusion line to another towards the weld axis with some overlapping of the latter. Crystallization in the welding bath

Card 1/2 UDC: 621.791:542.65

ACC NR: AP7004193

proceeds at variable rates. The period of accelerated crystal growth is followed by periods of extremely inhibited growth. Orig. art. has: 5 figures. [AM]

SUB CODE: 13/SUBM DATE: 24Nov65/ORIG REF: 009/

Card 2/2

KHUTSELIDZE, D.Ye.; CHIKHLADZE, V.L.; ONUFRIYEV, V.G.; KUSHAKEVICH, Yu.P.;
DYATLOV, V.K.

Isomeric transitions in In^{114m} and Te^{115m}. The β^+-spectrum of Te^{115}.
Izv. AN SSSR.Ser.fiz.29 no.5:734-738 My '65. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.

DYATLOV, V. L.

112-1-853

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 1,
p. 137 (USSR)

AUTHORS: Bogolyubov, V. Ye., Dyatlov, V. L.

TITLE: Reduction of the Time Constant of Drive Control Circuits Containing a Bridge Rectifier (Snizheniye postoyannoy vremeni tsepey upravleniya elektroprivoda, soderzhashchikh vypryamitel'nyy most)

PERIODICAL: Tr. Mosk. energ. in-ta, 1956, Nr 22, pp. 87-98

ABSTRACT: A bridge rectifier is an indispensable component part of magnetic amplifiers of electric drives. While steady states in bridge rectifiers have been investigated in sufficient detail, their transient conditions require further study, particularly in connection with the magnitude of the time constant of the circuit. It is important to evaluate the time constant of the magnetic amplifier circuit, accounting for the influence of the bridge rectifier, when designing such schemes. Experience demonstrates that in certain conditions the introduction of the bridge rectifier increases, and in other conditions reduces, the time constant of the

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Reduction of the Time Constant of Drive Control Circuits Containing a Bridge Rectifier (Cont.)

system, by several times. In order to investigate the problem, a circuit is examined, which contains resistance R and inductance L of the generator (source of a-c energy) and resistance R_d and inductance L_d of the d-c load, fed through the bridge rectifier. It is assumed that R_d and L_d are given, and that the values of R and L can be changed. The transient process is investigated for the commutation operating conditions of the system, i.e. for a position when all 4 valves of the bridge are transmitting current. In consequence of solving the system of differential equations, formulas of current changes in relation to time are obtained; in these the time constant of the scheme appears as a parameter. A roughly approximate formula is given for the system time constant

$$\tau \cong \frac{T}{2} + \tau_d \left(1 - \frac{L}{L_d}\right),$$

where τ_d is the time constant of the load circuit. Theoretical calculation and experience demonstrate that the introduction of an additional inductance into the circuit of

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Reduction of the Time Constant of Drive Control Circuits Containing a Bridge Rectifier (Cont.)

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the a-c current source permits the reduction of the value of τ_1 by several tens of times. However, at the same time one has to increase the applied a-c voltage by the value of the voltage drop in the additional inductance.

L.B.G.

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16.8000 (1031)
9,2530

AUTHORS: Bogolyubov, V. Ye., Dyatlov, V. L.

TITLE: A method for calculating the transients in systems of higher order with magnet amplifiers and other essentially non-linear elements

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1961, 53-54, abstract 8B228, ("Tr. Soveshchaniya po avtomatizir. elektroprivodu peremen. toka", 1955, M., AN SSSR, 1958, 300-311

TEXT: Considering the questions connected with the investigation of dynamically complicated, essentially non-linear technical systems the authors use the "method of phase families" proposed by them for the approximative solution of systems of differential equations

$$\dot{x}_i = f_i(x_i, m_i), \ i = 1, \dots, n, \qquad (1)$$

where the "parameters" m_i are known functions of the time t, of the coordinates $x_k (k = 1, \dots, i-1, i + 1, \dots, n)$ and of the integrals of

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A method for calculating the . . .

the $x_i (i=1,\ldots,n)$ with respect to the time. The proposed method is based on the assumption that in a sufficiently short interval the variations of the "parameters" are negligibly small compared with the variations of the corresponding coordinates and of their timely derivatives.

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The method of calculation resulting from this assumption consists in the following: At first n planes $(x_1, \dot{x}_1), \ldots, (x_n, \dot{x}_n)$ are taken, and on each of them there is constructed the zero level of the corresponding function $\dot{x}_i - f_i (x_i, m_i)$ which is determined by the initial value (for t = 0 of the "parameter" m_i. Then new values of all m_i are calculated which correspond to the new moment, where the growths of the coordinates are calculated according to the formulas

$$\Delta x_i(0) = f_i(x_i(0), m_i(0)) \cdot \Delta t, \ i = 1, \ldots, n, \qquad (2)$$

while the growths of the integrals are put equal to

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$$\frac{x_i(0) + [x_i(0) + \Delta x_i(0)]}{2} \cdot \Delta t, \quad i = 1, \dots, n. \qquad (3)$$

Continuating analogously one obtains in every plane (they are called "phase planes" by the authors) a certain number of levels (which are called "phase trajectories").

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The set of the levels in one plane is denoted as "phase family" of the corresponding plane and allows to draw an arbitrary number of oriented polygons from which the courses of all $x_i(t)$ and of their integrals can be approximatively determined, i. e. one obtains approximative (corresponding to the above assumption) parameter representations of what is usually denoted as a phase trajectory (the authors use this denotation, as already mentioned, in another sense). The mentioned oriented polygons give no possibility to judge simply and directly on the structure of the 2n-dimensional phase space of the system (all the x_i and their integrals serve as coordinates). These polygons are projections onto the planes $(x_i, \dot{x}_i)$ of the trajectories of the space $(x_1, \dots, x_n, \dot{x}_1, \dots, \dot{x}_n)$ which is the image of the

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phase space for a certain mapping. Considering concrete technical problems (transients in the saturation choke, calculation of a servo system, calculation of a control system) the authors assert that it is really possible to conclude from the form of these polygons to the behavior of the corresponding systems. The authors give no criteria for the verification of their initial assumption, however, think that, since their method is suitable for the mathematical investigation of electro-systems with constant parameters, the results can be controlled sufficiently fast from the point of view of their so-called "physical sense". The reading of the paper is aggravated by crass deviation from the terminology usual in the theory of phase spaces and by a number of misprints.

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[Abstracter's note: Complete translation.]

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9(0)

SOV/112-59-3-5429

Translation from: Referativnyy zhurnal. Elcktrotekhnika, 1959, Nr 3, p 162 (USSR)

AUTHOR: Andreyev, C. P., Bogolyubov, V. Ye., and Dyatlov, V. L.

TITLE: Allowing for Real Properties of Materials in the Ramay's Magnetic Amplifier (K uchetu real'nykh svoystv materialov v magnitnom usilitele Rameya)

PERIODICAL: Tr. Mosk. energ. in-ta, 1958, Nr 27, pp 118-126

ABSTRACT: A graphic method of plotting the input-output characteristics of a one-shot half-wave (high-speed) magnetic amplifier is presented. The method is based on experimental characteristics of the amplifier core and on the plot of the maximum control current against its average value determined from an amplifier model. Constructing the characteristics for controlling the rectified half-wave voltage and for controlling a resistance is described. Nine illustrations. Bibliography: 4 items.

I.B.N.

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~~24(3)~~ 16.6800 SOV/161-59-1-4/25

AUTHORS: Shamayev, Yuriy Matveyevich, Candidate of Technical Sciences, Docent, Dyatlov, V. L., Pirogov, Arkadiy Ivanovich, Junior Scientific Worker

TITLE: Dynamic Characteristics of Ferrites

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1959, Nr 1, pp 27-34 (USSR)

ABSTRACT: The properties of ferromagnetic materials during a magnetic reversal by impulses are investigated here. On the basis of the papers (Refs 3, 2, 5, 6, 7, 8, 1), formula (7) is derived for these properties. The correctness of formula (7) for quite different methods of magnetic reversal in ferrite was investigated experimentally. The experimental results for 3 ferrites of the brands BT-2, K-28 and K-132 are shown. The experimental data correspond to those computed for r(B). The function $H_0(B)$ does not quite correspond with the static boundary-hysteresis loop $H_{om}(B)$. Formula (12) for the process of magnetic reversal is written down, this formula expressing the process better than (7). B - induction, H - field, r - a certain coefficient. The reversal coefficient and the

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Dynamic Characteristics of Ferrites SOV/161-59-1-4/25

dynamic characteristic B = B(q) are investigated. q can be determined as a reduced charge, which passed the magnetizing coil during the magnetic reversal of the ferromagnetic sample. It is shown that the dynamic characteristic can be approximately expressed by a flat curve B(q). This allows the processes of magnetic reversal to be expressed by equations without differentiations. The publication of this article was recommended by the institute mentioned under "Association". There are 4 figures and 14 references, 8 of which are Soviet.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta
(Chair of Theoretical Principles of Electrical Engineering at the Moscow Institute of Power Engineering)

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SUBMITTED: November 6, 1958

Card 2/2

DYATLOV, V. L., Cand Tech Sci -- (diss) "Processes of impulse magnetic reversal of ferromagnetites." Moscow, 1960. 11 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Power Inst); 250 copies; price not given; (KL, 22-60, 136)

DYATLOV, V. L.

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov, Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

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Ferrites (Cont.) SOV/4893

Telesnin, R. V., and A. M. Ovchinnikova. Temperature Dependence of the Magnetic Viscosity of Ferrite Garnets of Yttrium and Gadolinium 325

Fomenko, L. A. On the Temperature Dependence of Magnetic Viscosity of Ferrites 330

Polivanov, K. M. Analysis of Variations in Average Magnetization and Their Effect on Its Dynamics 332

Fabrikov, V. A. Theory of Processes of Pulsed Reversal of Magnetization in Ferrites 346

Pirogov, A. I. The Effect of Temperature on the Process of Magnetization Reversal in Ferrite Cores 352

Vitkov, M. G., and V. L. Dyatlov. Evaluation of the Effect of Eddy Currents During the Reversal of Magnetization of Ferrite Cores With Rectangular Hysteresis Loop 359

Card 11/18

24,2200

S/144/60/000/007/002/007
E041/E455

AUTHOR: Dyatlov, V.L.

108

TITLE: Square-Loop Tape-Core Parameters When Magnetic Inertia Effects Must be Allowed

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1960, No.7, pp.36-41

TEXT: The author has previously taken such effects into account (Ref.5) but the equations obtained cannot be solved by analytic functions. The segregation of those cases which need full treatment is therefore of interest. Strong surface effects can be studied in terms of the penetration of field into a semi-infinite medium. The equation linking induction and magnetizing force (from Ref.5) is Eq.(1), and that linking penetration and rate-of-change of induction is Eq.(2). If these two equations are integrated with respect to time, the penetration of the so-called shock field into the medium is given by Eq.(4), which is repeated in Eq.(6), with the substituted variables Q [illegible]e shock field, in terms of spontaneous induction, and ξ the

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Square-Loop Tape-Core Parameters When Magnetic Inertia Effects Must be allowed

normalized penetration. Eq.(6) can be solved if conditions are known when the penetration has values of zero and infinity. The former condition is readily found; the latter is indirectly derived from Eq.(6) and is Eq.(7). The solution to Eq.(6) indicates that the field penetrates into the medium as a plane-parallel displacement of the shock field. The solution can be simplified to Eq.(11) when the shock field is large and to Eq.(13) when it is small. Corresponding expressions for the field itself are Eq.(12), (14). The whole curve relating it to the normalized penetration is shown in Fig.1 (the squareness coefficient is 0.9). The most characteristic point occurs when field = β (in Eq.(6)). Fig.2 shows the depth ω at which this occurs for various surface values of the shock field. An approximate formula for a curve linking the ω-points is Eq.(17), where c = 1.2. When the surface value of the field is large, the expression simplifies to Eq.(18). It is convenient to introduce the concept of thickness of transition region where the induction changes from $-0.9 B_r$ to $+0.9 B_r$. This [illegible] in

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Square-Loop Tape-Core Parameters When Magnetic Inertia Effects Must be Allowed

Fig.1 as the area between the two vertical dotted lines. A formula for the transition thickness is Eq.(19). For example, with Permalloy having a conductivity of 2.10^4 mho cm^{-1}, the figure is 10 to 25 microns. There are 2 figures and 6 references: 5 Soviet and 1 German.

ASSOCIATION: Institut matematiki Siberskogo otdeleniya Akademii nauk SSSR (Institute of Mathematics of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: April 10, 1960

Card 3/3

36942
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E192/E382

94,9200

AUTHORS: Polivanov, K.M., Dyatlov, V.L. and Vitkov, M.G.

TITLE: Analysis of the remagnetization process taking into account the surface phenomena and dynamic properties of the material

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 6, 1961, 653 - 657

TEXT: In general, consideration of the surface phenomena and the remagnetization process in nonlinear ferromagnetics is a very complex problem. However, in the case of a medium characterized by a rectangular hysteresis loop the process can be easily analyzed by the method devised by W. Wolman and H. Kaden (Ref. 1 - Zs. f. techn. Phys., 1932, no. 7, 330). The results of analysis and experiment are in good agreement in this case, provided that the remagnetization process can be described by the static characteristic of the material. It was found by V.K. Arkad'yev (Ref. 2 - Electromagnetic processes in metals (Elektromagnitnyye protsessy v metallakh), ONGI, 1936)

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Analysis of the S/142/61/004/006/003/017
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that the formulae of Wolman and Kaden signified that the average value of the magnetic induction and total remagnetization of a sample depended only on the field impulse:

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$$I = \int (H - H_c)\, dt$$

for any $H(t)$, provided $H > H_c$. In the case of a linear medium the dependence between B and H can be represented by:

$$B + b_1 \frac{dB}{dt} + b_2 \frac{d^2B}{dt^2} + \dots = \mu_o \left(a_o H + a_1 \frac{dH}{dt} + \dots \right) \quad (2)$$

from which it is easy to derive expressions for the complex permittivity of the medium. The situation becomes very complex in the case of a nonlinear medium, except for a rectangular static characteristic. The dynamic equation for this case is

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very simple:

$$dB/dt = F(B)(H - H_c) \qquad (4).$$

The field is expressed as:

$$H + H_e + H_{B.T}$$

where H_c is the external vield and

$H_{B.T}$ is the eddy-current field.

It is shown that for a plate of thickness 2a the external-field impulse necessary for full remagnetization of the plate is expressed by:

$$\bar{I}_e = \bar{I} + \sigma a^2 B_o \qquad (6)$$

where $\bar{I}$ is the current impulse in the material necessary for remagnetization; this is equal to the external-field impulse

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Analysis of the E192/E382

in the absence of eddy currents (absence of surface effect). Similarly, it is shown that for a cylindrical medium having a radius a , the external field impulse is given by:

$$\bar{I}_e = \bar{I} + \frac{\sigma a^2}{2} B_o \qquad (7) .$$

By analyzing the above formulae it is concluded that the dynamic characteristics of the ferromagnetic material in the form of rings or tapes are insignificant in comparison with the surface effect if $\sigma a^2 B_o \gg \bar{I}$. The above results are in reasonable agreement with experiment. There are 2 figures.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo ordena Lenina energeticheskogo instituta (Department of Theoretical Principles of Electrical Engineering of the Moscow Order of Lenin Power-engineering Institute)

SUBMITTED: May 9, 1961

Card 4/4

DYATLOV, V.L.

Equations describing processes in ferromagnetic films. Vych. sist. no.2:3-15 '62. (MIRA 18:2)

DYATLOV, V.L.; DEMENT'YEV, S.K.; P'YANKOV, Yu.A.

Paramagnetic oscillations and rotation in ferromagnetic films. Vych. sist. no.2:16-23 '62. (MIRA 18:2)

DYATLOV, V.L.; DEMENT'YEV, S.K.

Calculation and design of a parametron using a magnetic film.
Vych. sist. no.2:43-51 '62. (MIRA 18:2)

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16,6810

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S/745/62/000/004/001/007
D201/D308

AUTHORS: Dyatlov, V. L., Dement'yev, S. K. and P'yankov, Yu. A.

TITLE: Application of the magnetic moment in ferromagnetic films to continuously rotating elements of computers

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Vychislitel'naya tekhnika, no. 4, 1962, 13-15

TEXT: The equation describing the motion of the magnetic moment in a single-domain magnetic film is analogous to that of the movement of a magnetic pointer. The simplest method of obtaining a continuous motion of magnetization vector is to use a film in which the periodically changing magnetic field is perpendicular to the axis of weak magnetization. The above equation has been solved on a computer at the Vychislitel'nyy tsentr Sibirskogo otdeleniya AN SSSR (Computer Center, Siberian Branch of the AS USSR). One of the solutions shows that the process of reversing occurs during a very short interval of time, approximately equal to one period of revolution of magnetization vector, thus making it possible to reverse

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Application of the magnetic ... S/745/62/000/004/001/007
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the rotation in approximately 0.2 x 10^{-8} sec by using very small fields. The element, based on the principle of rotation of magnetic moment, has been called a rototron and may be used as a logic element in digital computers. There are 2 figures.

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ACCESSION NR: AR3005870 S/0271/63/000/007/B037/B037

SOURCE: RZh. Avtomatika, telemekhanika i vy*chislitel'naya tekhnika, Abs. 7 B189

AUTHOR: Dyatlov, V. L.; Dement'yev, S. K. ~~3~~B

TITLE: On designing and calculating magnetic film parametrons

CITED SOURCE: Sb. Vy*chisl. sistemy*. Vy*p. 2. Novosibirsk, 1962, 43-51

TOPIC TAGS: parametron, computer component, computer

TRANSLATION: The design discussed here consists of a base layer with its long axis along the y-axis on which there are two output contacts in the xz-plane. A Permalloy film is sprayed on the bottom side of the base layer, then a conducting film which connects the contacts; the capacitor of the parametron, which consists of two conducting and one dielectric films, is sprayed on the other side of the base layer. Each conducting film -- the plates of the capacitor -- is connected to one of the output contacts. The system of films together with the contacts forms an oscillating circuit consisting of the film capacitor and an inductance; the value of the inductance is determined by the properties and size of the Permalloy film and the dimensions of the base layer. It is assumed that each

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parametron is located in some cavity in which exciting variable and permanent magnetic fields are set up that penetrate through the conducting films into the Permalloy film. These fields are applied along the y-axis of the parametron; it is also assumed that the axis of easy magnetization of the Permalloy film is established along the y-axis in the spraying process. The author examines the principal relations that characterize the parametron described here: the capacitance and the resistance of the film capacitor which is equivalent to the dielectric losses, the resistance of the film capacitor, the resistance of the conducting films of the circuit, the energy losses in the films, the output voltage and the power developed in the parametron. The author gives an estimate of the distance which should separate neighboring parametrons so that their mutual magnetic influence will be sufficiently small. There is one illustration and the bibliography consists of three references. G. V.

DATE ACQ: 15Aug63 SUB CODE: GE, CP ENCL: 00

Card 2/2

DYATLOV, V.L.; MESHCHANINOV, L.S.

Computer systems and automated systems for the control of research operations. Vych. sist. no.11:7-26 '64 (MIRA 18:1)

DYATLOV, V. N.

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Dyatlov, V N

Ispravleniye porokov stal'nogo i tsventnogo lita (Repairing Flaws in steel and non-ferrous castings, by) V.N. Dayatolv. Moskva, Masgiz, 1955.

131 p. illus., Diagrs., tables literatura: p. 129.

DYATLOV, V.S.

Construction of an associative memory system. Trudy MEI no.49:130-141 '63. (MIRA 17:3)

VARPAKHOVSKIY, A.S.; DYATLOV, V.V.; KUZENKO, I.T.; MIKHEL'SON, G.S.; SMIRNOV, A.G.; KOMONOV, A.S., red.

[Elements of contactless remote control systems] Elementy beskontaktnykh sistem telemekhaniki. Moskva, TSentr. nauchno-tekhn. informatsii Gos.proizvodstvennogo kom-ta po gazovoi promyshl. SSSR, 1963. 16 p. (MIRA 17:11)